



iSYSTEMS

Service Definition

Digital Marketplace
G-Cloud 12 - Lot 3

Advise | Transform | Manage | Protect

Document Control

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1 Introduction

CIO, Ramsay Health Care UK

What iSYSTEMS
has given us is
availability of staff
with the required
technical know-how.

The project has
been more complex
and challenging than
anticipated,
iSYSTEMS has
helped us keep to
our project timelines

iSYSTEMS has successfully participated on the Crown Commercial Services Digital Marketplace, on both G Cloud and DOS for four years. This document provides a comprehensive guide to our service offerings, competencies and engagement models, but do feel free to get in touch should you have any questions or require any clarification.

1.1 Company Overview

Founded in 2013 by leading industry experts, iSYSTEMS is a vendor agnostic enterprise infrastructure services and solution provider. Combining decades of experience in the IT value added reseller (VAR), IT solution and systems integration sector, the vision was to create a new highly technical & highly consultative customer focused technology solutions partner who will always go the extra mile. We guide our customers through the complexities of public, private and best of breed hybrid cloud solutions through independent and cost-effective consulting.

iSYSTEMS aligns technology, insight, and resources across a range of commercial and enterprise business applications and core areas of specialisation include:

- ✓ Hybrid Cloud and Digital Transformation
- ✓ Modern Workplace
- ✓ Storage, Backup and Archive Solutions
- ✓ Disaster Recovery and Business Continuity Planning
- ✓ Data Protection, Governance and Compliance
- ✓ Cyber Resilience and Techno-Physical Security



Hybrid Cloud and Digital
Transformation



Storage, Backup and Archiving
Solutions



Cyber Resilience and
Techno – Physical Security



Disaster Recovery and Business
Continuity Planning



Modern Workplace



Data Protection, Governance and
Compliance

By assembling a team of highly motivated, highly skilled and experienced individuals who want to be part of our ethos to do things better, iSYSTEMS provides big company benefits whilst maintaining a boutique service mentality ensuring our customers feel partnered, not pressured or dictated to.

Our ultimate ambition with all of our customers is to be viewed as an extension of their own internal IT teams and their go-to partner of choice. We achieve this by closely aligning our key personnel with our customers and ensuring that we put enormous energy, effort and enthusiasm into understanding their priorities, challenges and business goals.

We are vendor agnostic, flexible, agile and easy to work with! We believe that by working in partnership with our customers we help them make the most informed technology decisions and assist them in negotiating with the manufacturers to ensure the highest discounts on new CAPEX and OPEX initiatives.

Our customers are not just an account code and a contact on a CRM system. We take time to get to know our customers personally, conduct quarterly business reviews and weekly technical project calls. We promote multiple points of touch from sales, technical and back office. We truly embrace cloud systems, so we are always available anywhere.

1.2 Value Proposition

One of the key challenges for organisations of all sizes is how best to deliver projects in a risk averse, cost-conscious climate. iSYSTEMS can help you through transitions, migrations, implementations, and upgrades of both a technical and service nature. These services can be delivered on a fixed price or time and materials day rate basis. We combine the best of structured project delivery methodologies with our experience in the field. We take you on an end-to-end journey through a transition process initially, into a transformation to a preferred practice solution or service via agreed methodologies, then continuous improvement through innovation.

This journey can be applied to any project or programme of work regardless of size or technology stream (Infrastructure or Development). The modular building blocks of deliverables (such as statement of requirements, statement of works, project plans, testing plans) can be used to create a fully detailed milestone driven project or managed service.

iSYSTEMS delivers a 'cloud' approach to resourcing projects by using a tiered resource pool. This 'virtual bench' ensures capacity and agility of resources which can be flexed up and down to meet project milestones and deliverables cost effectively. By using our Projects and Professional Services solutions you can dynamically respond to changing project demands by flexing resource up and down, with lead times to mobilise typically within a week or two!

Our bespoke delivery solutions - from the provision of one-off resources and entire project teams to fixed price discrete parcels of work and phased projects - are supported by our in house PMO team. This provides real value add such as real time immediate accounting and financials, bespoke MI reporting and consolidated invoicing.

1.3 What the Service Provides

This journey can be applied to any project or programme of work and the modular building blocks of deliverables (such as statement of requirements, statement of works, project plans, testing plans) can be used to create a fully detailed milestone driven project or managed service.

What sets us apart is the way we gain understanding of our customer's business goals, challenges and opportunities and integrate this insight into our solution design process. Our consultative and vendor agnostic approach sharpens our focus, guides our selections and yields superior results for our clients.

From in-depth assessment, design, and deployment services, to complete asset procurement, integration, and managed services, iSYSTEMS aligns technology, insight, and resources across a range of commercial and enterprise business applications.

1.4 Overview of the G-Cloud Service

Utilise our technical skills and expertise to build your private cloud environment on premise, migrate to public cloud or create a best of breed hybrid solution. Professional Services engagements include cloud readiness assessments, infrastructure assessments / health checks, 365 integration etc. Any solution design involves extensive technical engagement, ensuring we have a detailed understanding of the customer's existing environment, core requirements and technical considerations for the most appropriate design to meet technical and business needs.

We can help you develop a secure strategy, extend your capabilities, and implement and deploy your plan.

1.4.1 Cloud and Digital Transformation - create a connected and intelligent enterprise

Moving systems from on-premises to public or hybrid clouds is complex. And your resource-intensive applications and datasets could see your bills for cloud computing spiral out of control. So, you need a plan. Without a comprehensive strategy, you risk breaching regulation, data sprawl and being tied into vendor contracts with pricing models that do not suit your needs.

Our next generation infrastructure and cloud migration expertise helps you adopt a cost-conscious, but opportunity driven approach to ensure your data strategy translates into digital success. We can provide you with a cloud readiness and adoption assessment, and we can help you articulate the business drivers and benefits from cloud computing. Once we have examined your entire value chain to identify additional opportunities, we'll help you conduct a pre-migration assessment. We can help you harmonise your on-premises and hybrid cloud architecture to get the best of both worlds.

- ✓ Understand what approach is the most appropriate.
- ✓ Determine the true costs of migrating with a cost benefit analysis and ROI report.
- ✓ Receive an optimised Service Level Agreement so you can be 100% confident your most precious assets.
- ✓ Benefit from a consumption-based model across cloud and on-premises.
- ✓ Increase agility to shorten development cycles with a composable infrastructure.
- ✓ Monitor performance.

Additionally, many organisations are developing or expanding DevOps teams to enable increased efficiency in application creation and delivery. But to remain competitive and satisfy the needs of Agile Development Teams, IT organisations need to provide a computing environment that enables them to develop and deploy application stacks in real time. This has proven to be a challenge as IT must adhere to corporate governance, workflows, and security.

iSYSTEMS helps organisations to create and control unified, simple, and easy to manage public, private and hybrid cloud environments. We can provide you with a suite of cloud provisioning and orchestration solutions that integrate with your existing infrastructure while empowering the future business roadmap.

1.4.2 Modern Workplace - let's make your remote work, work

Acclimatising to remote working requires a new way of thinking. Partner with us to identify the technologies and strategies that facilitate virtual work and remote collaboration. Whether it's embracing virtual desktops or integrating cloud-based collaboration platforms, we'll help you with the technology and human aspects to help you achieve digital success.

We can help you build a sustained adoption work from home programme that will do more than just help you tread water. We help firms deliver the true ROI and team productivity benefits that can come with remote working.

- ✓ Migrate to Office 365 with Azure Active Directory
- ✓ Implement Azure Virtual Desktop (AVD) in Azure
- ✓ Implement Enterprise Mobility (EMM) solutions such as Microsoft Intune or Airwatch to provide policies, security and authentication of the devices
- ✓ Modernise legacy VDI implementations

Effective EUC management programmes comprise elements of governance, process, people, and technology, each of which should be customised to meet the specific needs of the organisation. We take time to understand our customers, their strategic objectives, their IT users and the way they work. Our consultative approach ensures we deliver them a relevant and positive IT experience, whatever device they are using, wherever they may be.

- ✓ Deploy at cloud-like speed and scale - accelerate application and service delivery through a single interface that precisely composes infrastructure at near-instant speeds and stand-up services in minutes
- ✓ Leverage AI in your storage and compute environments to help you pivot your teams from firefighting to adding business value

1.4.3 Storage, Backup & Archiving – recover fast, breathe slow

Take back control of performance, management and total cost of ownership of your data in the face of hyper growth. All vendors claim to have the "best solution" and it can be difficult to understand exactly which solutions are the best fit for your organisation. We can help you build a hierarchical storage management solution to increase service levels to critical applications and data sets, and use your data in multiple new and creative ways.

We'll protect you in the fight against ransomware by ensuring your data is immutable, air-gapped and unchangeable so it cannot be encrypted by attackers. Fast and complete recovery disarms ransomware threats!

We'll help you build a backup strategy that gives you the confidence to know your data is safe and secure, while spending less time on routine backup management. We'll ensure you can provision unlimited virtual copies for application development, run testing and analytics, and rapidly recover large databases.

As the requirements to store and analyse vast quantities of historical data grows and become more complex, storage and archiving has come of age. We can help you to understand the unique business requirements for data access and retention management, before implementing a secure storage and archive data strategy.

Partner with us to navigate a saturated landscape to scope out strategic solutions, not just short-term tactical fixes.

1.4.4 DR & BCP – be fully prepared for a crisis!

Business disruptions can strike at any time - from adverse weather and natural disasters to more commonplace events like power outages or cybercriminal activity. There's no way to predict one. But what separates the winners from losers is how quickly a business can get back on its feet following a crisis. We can help you develop a business continuity plan to safeguard what matters most, no matter the cause of disruption.

Effective DR configuration depends on two important factors – recovery time objectives (RTO) and recovery point objectives (RPO). From enabling the use of as-a-service offerings or public clouds to host entire DR environments, to restoring large multi-TB databases in minutes, we'll help you to:

- ✓ Have RTOs of single figure minutes and RPOs of seconds
- ✓ Easily replicate and migrate to public cloud services to avoid second Data Centre costs
- ✓ Provide as-a-service solutions to provide an ongoing OPEX cost model
- ✓ Enable self-service protection
- ✓ Leverage Public Cloud services and solutions
- ✓ Deliver Active / Active Metro Cluster storage and compute solutions
- ✓ Fully automate DR testing with non-disruptive failover

We can help you build a disaster recovery and business continuity plan based on the foundations of continuous data protection, giving you the confidence to move forward with purpose.

1.4.5 Information Governance and Data Protection – good governance means better business outcomes

An effective data governance and protection strategy is not only business critical, but can save you time, money, and resources. We'll equip you with a forward-looking strategy combined with the necessary security controls to keep your company and customer data safe.

The need for high quality data management through each phase of the data lifecycle is greater than ever. We'll help you build effective policies that lead to improved business outcomes and drive growth. With the right strategy, you'll improve the quality of your data, reduce costs, and increase your team's productivity. If you need help with data protection from an experienced team, we're the perfect fit for you.

Organisations need affordable, reliable, and competent compliance support. A DPO can be seen to play a key role in your organisation's data protection governance structure and to help improve accountability.

Many approaches have focused on the IT arrangements or an organisation's information security protocols. These solutions satisfy certain aspects of the Data Protection Regulations requirements but fail to address the personal information management system aspects, including rights of data subjects and reporting. iSYSTEMS offers a different approach, encompassing the information security aspects and the personal information management elements in a range of services to assist our clients with their data protection legal compliance.

DPOaaS is a practical and cost-effective solution for organisations that don't have the data protection expertise and knowledge to fulfil their Data Protection obligations under the Data Protection Regulations. With this annual subscription service, iSYSTEMS will serve as an independent data protection expert to your organisation and you will gain access to expert advice and guidance from our team of dedicated in-house Data Protection Officers.

1.4.6 Cyber Resilience and Techno-Physical Security – don't become another statistic

COVID-19 is blamed for a 238% increase in cyberattacks, with 80% of firms worldwide increasing their digital security infrastructures. The threat landscape is continually changing, and ransomware attacks are more pervasive today than at any other time. Part of the reason is that work from home policies are making it easier for cyber criminals to pull off attacks. Your employees are no longer behind your enterprise-grade infrastructure.

Threat actors are adapting and switching their operations strategically, operationally and technically. So, you need to stay one step ahead at all times. We have assembled a team of operatives comprised of ex-Special Forces and intelligence services to test your defences in real world attack simulations. This helps you understand how your data can be exploited by adversarial forces and how to build a water-tight data security strategy.

We have a team of cyber security experts on hand to help you restore lost data, even from the most unlikely disasters. We can help you identify the risks, develop back-up strategies and simulate incidents to optimise your cyber security and business resilience plan.

1.4.7 Associated Services

The iSYSTEMS Cloud Platform is your single point of entry to Cloud Solutions - <https://www.isystemsintegration.com/client-portal> . As an iSYSTEMS client, your time and resources are important to us, our portal will allow you to;

- ✓ Access a catalogue of ready-made market cloud services
- ✓ Manage subscriptions and renewals in one central location
- ✓ Access your current agreement information
- ✓ View analytics in real time via the consumption dashboard
- ✓ Create quotes and convert to orders effortlessly
- ✓ View consolidated monthly billing
- ✓ Set budget alerts

2 Data Protection

Many approaches have focused on the IT arrangements or an organisation's information security protocols. These solutions satisfy certain aspects of the GDPR requirements but fail to address the personal information management system aspects, including rights of data subjects and reporting. iSYSTEMS offers a different approach, encompassing the information security aspects and the personal information management elements to assist our clients with ensuring data protection legal compliance.



2.1 Information Assurance

iSYSTEMS is registered with the ICO and as such is governed by their guidelines around GDPR and data protection. All personal data is held securely within the cloud, it can be easily accessed and erased as requested. A limited number of iSYSTEMS staff have access to this confidential information and this is managed by the HR manager and Data Protection and Compliance Officer. iSYSTEMS will not be handling or holding any client data. The only personal data we hold is for our permanent and contracted staff.



iSYSTEMS holds the following security accreditations:

- ✓ ISO27001 Accredited
- ✓ Cyber Essentials Certification
- ✓ ICO registered as Data Processor

2.2 Data Back-Up and Restoration

In order to maintain data integrity and information accessibility, iSYSTEMS performs regular backups of all electronically stored data, systems, and devices (where appropriate) inclusive of network devices and configuration files, on a regular basis. Regular restoration testing is performed regularly to ensure backup routines are working efficiently and effectively. Data backups occur as detailed below:

Daily Back-ups	Backup Retention Period	6 days
	No of Backup Copies	6
	Backup Performed	Mon, Tue, Wed, Thu, Fri & Sat
	Off-Site Storage?	Yes
Weekly Back-ups	Backup Retention Period	5 weeks
	No of Backup Copies	5
	Backup Performed	Saturday
	Off-Site Storage?	Yes
Monthly Back-ups	Backup Retention Period	12 Months
	No of Backup Copies	12
	Backup Performed	End of each calendar month
	Off-Site Storage?	Yes

Annual Back-ups	Backup Retention Period	7 Years
	Backup Performed	31 st December
	Off-Site Storage?	Yes
Defined Device (Network)	Backup frequency	Weekly and before any updates or changes are applied

2.3 Business Continuity Statement

iSYSTEMS has a Business Continuity Plan (BCP) in place to ensure the business is prepared in the event of extended service outages caused by factors beyond the organisation's control. The BCP is designed to restore services to the widest extent possible in a minimum time frame.

iSYSTEMS has comprehensive Information and IT Asset logs which identify the critical systems, necessary configuration specifications, support teams and testing activities to support and, when necessary, activate to ensure business continuity.

The BCP includes:

- ✓ Formulation of a business continuity strategy consistent with business objectives and priorities
- ✓ Identification of all critical business processes and documented procedures
- ✓ Prioritisation of each identified business process
- ✓ Identification of critical events that may influence the priority of a process
- ✓ Identification of possible accidental and deliberate threats to services
- ✓ Determination of the potential impact of each threat
- ✓ Specification of the conditions that will cause the plan to be invoked
- ✓ Identification of measures to reduce the risk of each potential threat
- ✓ Preparation of emergency arrangements
- ✓ Ensuring that security levels are comparable with normal operating conditions (depending on cost)
- ✓ Selection of a recovery team within which each member understands their responsibilities
- ✓ Nomination of a departmental coordinator
- ✓ Education and training for recovery team members and other appropriate staff
- ✓ Regular testing of the plan
- ✓ Regular reviewing and updating of the plan

2.4 Privacy by Design

The iSYSTEMS Data Protection Policy and Acceptable Use Policy provide guidance on the use and management of personally identifiable information. The policies and appropriate mandatory training are provided to all staff involved in the processing, storing and management of personally identifiable information in accordance with the iSYSTEMS Security Training and Awareness Policy.

The iSYSTEMS Data Protection Officer (DPO) reviews the protection of personally identifiable information prior to collection alongside the organisation's legal obligations in line EU GDPR 2016 and UK DPA 2018.

The DPO is accountable for providing advice and guidance to business, managers, users, and service providers regarding individual responsibilities. They are responsible for ensuring appropriate operational and technical controls are implemented for collection, processing and transmission of personally identifiable information.

**EMEA Head of IT
Infrastructure,
Liberty Speciality
Markets**

iSYSTEMS is our go-to partner, we see them as an extension of our own IT team. Their consultants are extremely knowledgeable and professional, every one of them has broad and deep skillset combined with many years' experience. The account management team is focused, flexible and easy to deal with. No problem is too big and no requirement too small.

3 Using the service

By assembling a team of highly motivated, highly skilled and experienced individuals who want to be part of our ethos to do things better, iSYSTEMS provides big company benefits whilst maintaining a boutique service mentality ensuring our customers feel partnered, not pressured or dictated to.

3.1 Ordering and Invoicing

The customer shall, upon and subject to approval by iSYSTEMS Integration Ltd, purchase Services by issuing a Purchase Order. Each Purchase Order must be signed/sealed, as applicable, if requested by iSYSTEMS Integration Ltd., or (in the case of electronic transmission) sent, by an authorised representative, indicating the project identification number, specific Services, quantity, price, total purchase price, bill-to and ship-to addresses, tax exempt certifications, if applicable, reference to the statement of works, and any other special instructions.

3.2 Pricing Overview

iSYSTEMS engagements are delivered on either a fixed price / discrete parcel of works or day rate basis. If you don't want to be tied into contracts, trouble shooting and support services are available on a day date / pay as you go basis, either on site or remotely.

Our published SFIA rate card is available, but we are flexible and easy to engage with. We are happy to discuss bespoke pricing models and our account management and service delivery teams are supported by a dedicated account management team of sales, technical and pre-sales. A dedicated account manager or management team will be assigned to you and will be on hand to support you throughout.

3.3 On-Boarding, Off-Boarding, Service Migration, Scope etc.

Whilst providing big company benefits, we maintain a boutique service mentality. With a dedicated technical and pre-sales team, we build trust with our customers and truly understand their priorities, challenges and business goals. Our customers feel partnered, not pressured, or dictated to.

The essence of our delivery approach is a best of breed methodology which helps us to create a known and repeatable approach to projects. Through consultation, advice and mapping out the core dependencies, we ensure that by the time a project or engagement is due to start we have helped the customer through activities such as white boarding, performance bench testing, evaluation assessments and business justification. We ensure that we have identified any skills gaps and plugged them, we have agreed training plans and any knowledge transfer, and we are working on time and to budget.

Ultimately, we help our customers evolve to a service-enabled model, providing on-demand elastic services and agility, enabling IT to focus on innovation.

Our customers are not just an account code and a contact on a CRM system. We take time to get to know our customers personally, conduct quarterly business reviews and weekly technical project calls. We promote multiple points of touch from sales, technical and back office. We truly embrace cloud systems, so we are always available anywhere.

iSYSTEMS offers the following value-add and additional services can be provided as identified during service management reviews:

- ✓ **Service Management Reviews** - iSYSTEMS will be available to meet your Project Managers and PMO team to review progress against plan, risks, issues, and mitigating actions. We will agree MI content and frequency during the scoping and discovery phases. Over the course of any projects or engagements. 'In-flight' deliverable and milestone reviews will be scheduled at a frequency agreed during the engagement initiation and onboarding.
- ✓ **Engagement Wrap Up / Off Boarding** - Meetings will be held at the end of an assignment, ensuring that project completion is formally documented, and appropriate handover is effected.
- ✓ **Technical & Program Support** – iSYSTEMS can provide support, governance and direction via our in-house Project Management, Technical Architecture and Engineering teams.

3.4 Training

iSYSTEMS can provide training, mentoring and knowledge transfer throughout any engagements. This can range from coaching sessions to classroom training programmes with comprehensive documentation

3.5 Implementation Plan

A detailed implementation plan can be provided to the buyer on request. The essence of our delivery approach is a proprietary methodology which helps us to create a known and repeatable approach to projects.

Through consultation, advice and mapping out the core dependencies, we ensure that by the time a project or engagement is due to start we have helped the customer through activities such as white boarding, performance bench testing, evaluation assessments and business justification.

The Phases will typically include:

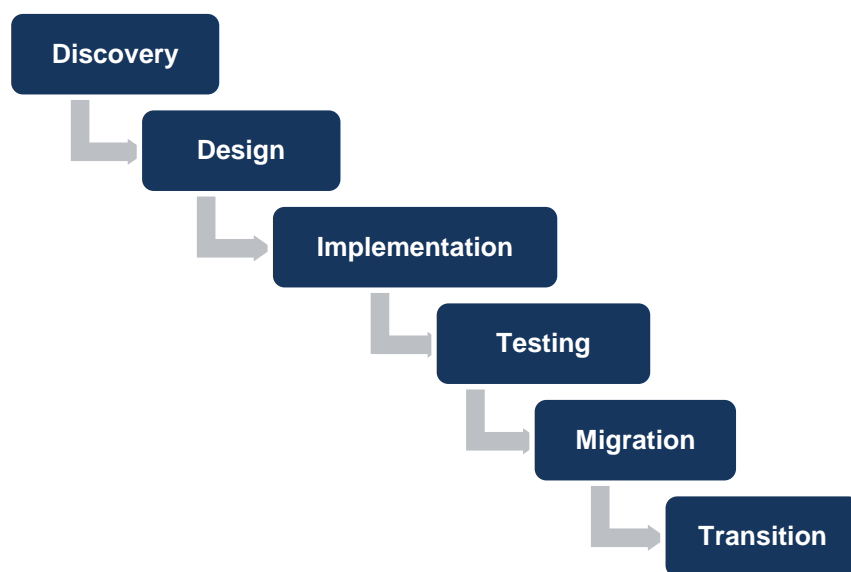


Figure 1 - Phased Approach

3.6 Service Management

iSYSTEMS engagements are delivered on either a fixed price / discrete parcel of works basis or time and materials day rate basis. The account management and service delivery teams are supported by dedicated team as illustrated below:

With a dedicated account management team of sales, technical and pre-sales, our approach is to work six to twelve months ahead of the present time. This allows us to build trust with our customers and truly understand their priorities, challenges and business goals. iSYSTEMS will conduct quarterly service reviews and if appropriate can implement a Continuous Service Improvement Plan (CSIP).

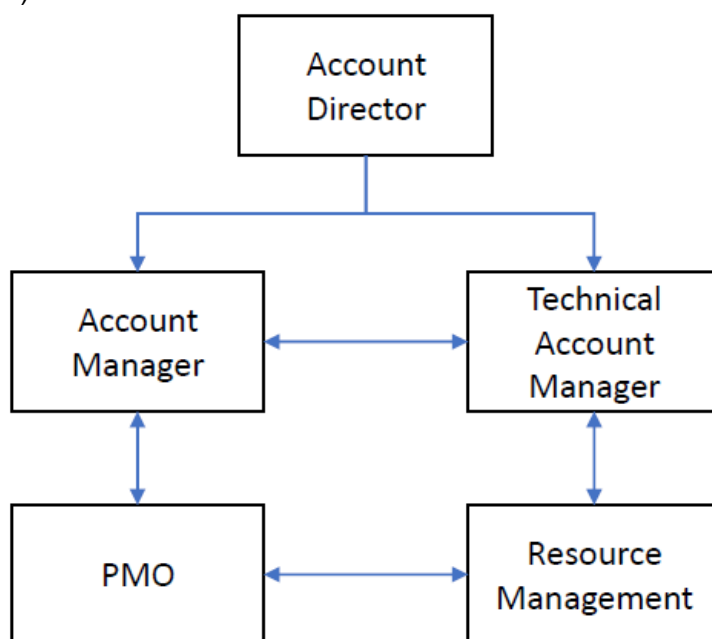


Figure 2 - Account Management Structure

We consult, advise, and map out the core dependencies to ensure that by the time a project or engagement is due to start we have helped the customer through activities such as white boarding, performance bench testing, evaluation assessments and business justification. We ensure that we have mapped out any skills gaps and plugged them, we have agreed training plans and any knowledge transfer, and we are working on time and to budget.

3.7 Service Constraints

Due to iSYSTEM's flexible delivery approach, there are no known constraints of the service. Our key goal is to help our clients evolve to a service-enabled model, providing on-demand right sized elastic services and agility. We free you from the overhead of managing, monitoring, and maintaining your IT systems, enabling you to focus on business innovation. We can provide on-site or remote support, and are flexible, agile, and easy to work with! Our ultimate ambition with all of our customers is to be viewed as an extension of their own internal IT teams and their go-to partner of choice.

3.8 Service Levels

At iSYSTEMS we understand that every customer is different, this is why we offer bespoke managed service solutions. Although we have core technologies and principles underpinning our managed service offerings, we are able to tailor our solutions and services to meet our customer's requirements and integrate with their culture.

We work with our customers as a trusted partner and help them to reduce or at least make their costs predictable, while managing complexity and adopting innovative technology.

We specialise in hybrid technology solutions with managed service wrap arounds - you may want systems supported, maintained, and managed by industry recognised experts and we will help you to achieve better service levels, improved security and resilience, scalability, and the flexibility to adapt to changing business conditions. If you don't want to be tied into contracts, trouble shooting and support services are available on a day date / pay as you go basis, either on site or remotely.

Our key goal is to help our clients evolve to a service-enabled model, providing on-demand right sized elastic services and agility. We free you from the overhead of managing, monitoring, and maintaining your IT systems, enabling you to focus on true business innovation.

4 Provision of the service

We are agile, flexible, and easy to work with. Feel free to contact us if any of the following information seems unclear or if you simply have any questions.

4.1 Customer Responsibilities

The customer shall, upon and subject to approval by iSYSTEMS Integration Ltd, purchase Services by issuing a Purchase Order. Each Purchase Order must be signed/sealed, as applicable, if requested by iSYSTEMS Integration Ltd., or (in the case of electronic transmission) sent, by an authorised representative, indicating the project identification number, specific Services, quantity, price, total purchase price, bill-to and ship-to addresses, tax exempt certifications, if applicable, reference to the statement of works, and any other special instructions.

4.2 Technical Requirements and Client-Side Requirements

Through consultation, advice and mapping out the core dependencies, we ensure that by the time a project or engagement is due to start we have helped the Buyer through activities such as white boarding, evaluation assessments and business justification. We will scope and discuss any pre-requisites and assumptions with the Buyer during scoping and kick off as part of agreeing the order form and accompanying scope of works document.

4.3 Outcomes/Deliverables

All outcomes and deliverables will be agreed as part of the project kick-off, as these will be specific to each Buyer. iSYSTEMS always aims to deliver complex transformation projects on time and to budget.”

4.4 After-Sales Account Management

Our customers are not just an account code and a contact on a CRM system. We take time to get to know our customers personally, conduct quarterly business reviews and weekly technical project calls. We promote multiple points of touch from sales, technical and back office. We truly embrace cloud systems, so we are always available anywhere.

4.5 Termination Process

Please refer to G-Cloud Call Off terms and iSYSTEMS standard Terms and Conditions for rights to terminate. Early termination may incur a fee.

5 Our Experience

iSYSTEMS works extensively with public and private organisations. Sample case studies are provided below, additional reference calls are available upon request.



5.1 Competition and Markets Authority – Design and Implementation of Data Science Platform

The Competition and Markets Authority (CMA) is a non-ministerial government department in the United Kingdom, responsible for strengthening business competition and preventing and reducing anti-competitive activities. CMA assumed many of the functions of the previously existing Competition Commission and Office of Fair Trading and consolidated into a single government department.

In 2019 CMA relocated from its London Holborn headquarters to Canary Wharf and took this opportunity to migrate a majority of services to public cloud platforms on Azure and AWS, while retaining some services on premise on hyper-converged infrastructure to deliver an agile best of breed hybrid cloud solution.

Additionally, CMA had planned the introduction of a data science team since late 2018 and required the necessary skills and technology to empower a team of twenty strong data scientists to enable them to work on new anti-competitive cases, primarily of large e-commerce service providers such as Google, Facebook, Instagram etc.

Following a public tender on the Crown Commercial Services G Cloud Framework, iSYSTEMS was selected as the delivery partner to achieve the design and migration activities in a very aggressive timeframe.

The Challenge – Establish Advanced Analytics and Machine Learning Platform and migrate on-premises intelligence related data to secure cloud infrastructure.

iSYSTEMS was engaged at the commencement of this initiative while the CMA team was only partially in place, and steered CMA through the cloud infrastructure selection and technology adoption. This included a series of rigorous architecture reviews with senior stakeholders (CIO, CSO and CDO).

Our teams of Data and Dev Engineers, and Data Architects proposed a base architecture, which included flexible storage (S3, EBS, EFS) solutions for unstructured, semi-structured and structured data, substantial compute infrastructure (several GPUs) and various serverless services and microservices.

These services were secured by an AWS virtual private cloud, with a VPN gateway, forward and reverse proxies, a layer 7 firewall (Palo Alto), a DMZ with network access control lists and security groups. Azure was also considered as a potential infrastructure provider, but AWS was preferred, based on a comparison and scoring matrix and a strong case in terms of costs that iSYSTEMS presented to the architecture board.

To start with iSYSTEMS designed and implemented a solution to make use of Active Directory (On-Premises and Azure AD) for the proposed AWS environment. In addition, SSO was configured, making use of AD Connect for access to AWS and Corporate GitHub account. A VPN Solution between Azure and AWS Cloud platforms was implemented for existing Azure Services such as DNS and Active Directory. For monitoring dashboards, ELK stacks were created.

Meanwhile in order to enable advanced analytics and machine learning capability for the data science team, iSYSTEMS deployed our RAMP methodology (Rapid Analytics and Machine learning Platform) and stood up a JupyterHub hub using infrastructure as code, CI/CD via GitHub, with OAuth, MFA, SSO and TensorFlow, R, Python and Julia, - just a few of the programming environments that the data scientists would program on.

The hub was powered by a small server that would grant access to the users, then allocate elastic compute of up to 256 processors (with auto suspend following inactivity) depending on their processing requirements. In addition, the hub would allow secure access for the scientists to specific storage, depending upon which cases they were working on. The access was controlled programmatically and was updated constantly depending on the formation of the agile teams for each investigative case.

Besides the ML and advance analytics capability via the Jupyterhub, iSYSTEMS set up additional capabilities in extracting transforming and loading the data destined for investigations into a data lake. Several methods and tools were used to ensure that the ELT was both fast and efficient. The technologies we used to stream data when scrubbing the web included Kinesis Firehose, AWS Glue AWS Quicksight and Athena for pre-analysis, coupled with SQS for resilience.

In addition, we led the development of several AWS Lambda functions for data related transformation and preparation requirements in Python and built dockerized deployment packages to reduce the edit-build-test cycle of lambda functions and to have a more flexible runtime environment.

Finally, in order to increase productivity and engagement within the team, we introduced the adoption of the Agile methodology into CMA while creating the Data and Analytics Platform for Data Scientists on both AWS and Azure public clouds. During the project daily stand-ups were organised and Kanban boards were created to track the tasks and the progress. Several civil servants took part and successfully adopted the methodology.

All the above infrastructure and components were built by our engineers using Infrastructure as Code methodology, CloudFormation CodeBuild and several programming and scripting languages including Json, YAML, Python, Java etc. In the Azure cloud automation was provided by using PowerShell scripts to deploy ARM templates.

As a result of the above methodologies, technology adoption and project management, productivity was increased significantly. CMA was able to conduct several new investigative cases and deliver ground-breaking findings. This simply would not have been possible previously, without the analytics and machine learning platform and the immense data crunching capability.

iSYSTEMS subject matter experts created a data science platform in AWS, managed the ingestion of structured/unstructured data (internet scrubbing) from Nuix in Azure cloud, and modernised the reporting suite.

The data science platform including firewall, CI/CD, authorisations and serverless processing was completed in an impressive 8 weeks.

As a second phase of the project, iSYSTEMS spearheaded the migration of an on-premises database of several terabytes into the data lake for more advanced classification and tagging to further their investigations. For example, on an investigation that involved the merger of two large retailers, iSYSTEMS improved the performance of geospatial modelling of service areas using cloud infrastructure. This would previously have utilised on premise computing, making the process of investigation long winded, as well as prone to errors and omissions.

Impact and Results – Secure and elastic advanced analytics environment improves CMA's investigative capabilities

iSYSTEMS improved communication and fostered a collaborative culture between the IT and the Data Sciences teams. This was instrumental in brokering the deal for an independent analytics and machine learning platform in AWS, even though the IT department was working on Azure and office 356 migration.

Following the selection of the cloud provider and basic architecture, iSYSTEMS stood up the data sciences environment quickly and efficiently, utilising infrastructure as code methodology, offering step by step approach and great flexibility to CMA to fine tune their environment.

With the successful introduction of Agile methodology to deploy the tech, CMA data scientists not only realised the benefit and trained on the job a methodology that was new to them, they also used it in their investigative project work later on, providing a new paradigm to the rest of the organisation of working efficiently and collaboratively.



5.2 Ramsay Healthcare – iSYSTEMS Delivers Critical Skills

Ramsay Health Care UK (Ramsay) is one of the largest providers of independent hospital services in England with a network of 36 hospitals and treatment centres across England. These facilities provide a comprehensive range of clinical specialties to private and insured patients and, increasingly, to patients referred by the NHS.

In order to support the needs of its 2500 concurrent users, the demands of its existing services, the level of growth it was experiencing, and the requirements of a new electronic patient record system, Ramsay needed to modernise its IT infrastructure. However, with a relatively small IT department, it was not in position rapidly to progress the required projects.

“The quality of infrastructure we have in place in our data centres directly influences our operations”, said Geoff Cross, Ramsay’s CIO, “as, self-evidently, ready access to patient data is essential. We have been actively involved in updating our systems; however, the hands-on work in our data centres, which is ongoing, has mainly been done by iSYSTEMS”.

The Solution

Following their usual procurement procedure, Ramsay put various project requirements out to tender and, after the necessary due diligence, selected iSYSTEMS. Ramsay was not just attracted by iSYSTEMS' competitive pricing and guarantees. The company had previously worked with iSYSTEMS founders, Mick Cooper and Rob Robinson, and knew they could count on their expertise and reliability.

“As we had worked with iSYSTEMS before”, said Cross, “it wasn’t a difficult decision. They were competitively priced, and we were confident that they would deliver based on our previous experience of working with them.”

Once selected, iSYSTEMS became responsible for the design and implementation of the infrastructure required for Ramsay's new electronic patient record, including the provisioning of virtual machines and physical servers, equipment moves, rack diagrams and connectivity. iSYSTEMS also provided resources with the necessary skills to provide technical cover at key stages of the project and during other data centre events such as annual power checks.

“The staff sent by iSYSTEMS were proven individuals who had already experienced the environment at Ramsay and knew the systems as well as my own team,” said Simon Dent, Ramsay's IT Operations Manager.

iSYSTEMS Provided the following resources:

Resource	Activities
Solution Architect	<ul style="list-style-type: none">✓ Overall owner of the infrastructure solutions designs which includes new data centre space, rack layouts, power consumption and copper and fibre structured cabling.✓ Technical management of the complete move of the DR equipment to a larger suite which included compiling the plan for the complete shutdown, move and start-up of the systems, testing and signoff.✓ Design of all flash storage platform for Production and DR and data migration strategy.
Cisco Network Architect and Implementation Consultants	<ul style="list-style-type: none">✓ Reviewed existing Cisco network and designed additional components. Also enhanced the resiliency of the DR site and removed single points of failure.✓ Provisioned and tested all new networking components.✓ Designed the DMZ environment to facilitate the N3 requirements of the overall solution. Network Core Upgrade design to replace ageing hardware.

	<ul style="list-style-type: none"> ✓ Implementation and configuration of new Cisco hardware. End point migration planning. ✓ Replacement of Out of Bound Cisco hardware. Design and provision of cross site EVPL links. Connectivity of 3rd party managed Juniper switches to the core network.
SAN Architect and Implementation Consultants	<ul style="list-style-type: none"> ✓ SAN storage maintenance and data migration, snapshot and replication configuration. Maintenance of SQL SAN agents and backup integration. This includes firmware upgrades across multiple storage vendors and firmware upgrades to Brocade Fabrics. Decommissioning of old SAN storage. ✓ Design and deployment of Tier2 storage for backup to disk targets for CommVault. ✓ Design and deployment of new Flash storage and associated management servers. ✓ Design of data protection elements of replication, snapshots and SQL backup tool. ✓ Design of Dark Fibre cross site fibre connectivity. Merger of Brocade fabrics across sites and testing of links.
HP Blade / Rackmount Server and HP Virtual Connect Architect and Implementation Consultants	<ul style="list-style-type: none"> ✓ Designed a new blade chassis with HP Virtual Connect networking. Also designed Rackmount servers that run the core SQL database system. Provisioned, configured and tested all HP hardware. ✓ Deployment of HPE OneView and migration of six chassis into OneView. HPE OneView upgrades. ✓ Design and deployment of four HPE C7000 chassis to replace old hardware. Migration of all workloads from old to new hardware. The continued updating of Chassis, Virtual Connect, Blade and Server firmware. ✓ Deployed all servers, run all test plans, system load testing and monitoring against all infrastructure components to ensure resilience and scalability.
VMware Architect	<ul style="list-style-type: none"> ✓ Designed new vSphere 6 environment hosted on HP Blade servers to include disaster recovery using vSphere Site Recovery Manager. Built, configured and tested new vSphere environment.

	<ul style="list-style-type: none"> ✓ Upgrade of all vSphere elements and consolidation of vCenter servers. Subsequent upgrades for vCenter, ESXi hosts, VCOPS and VMtools and VMhardware. ✓ Design and deployment of McAfee MOVE to the vSphere environment.
Microsoft SQL Architect	<ul style="list-style-type: none"> ✓ Designed and implemented the Production and DR SQL infrastructure to host core database cluster and other SQL Always-On instances
Citrix Architect	<ul style="list-style-type: none"> ✓ Designed a new XenApp environment to present three of the applications across the WAN and provide printing services. ✓ Complex permissions requirements interpreted and deployed.
Barracuda Architect	<ul style="list-style-type: none"> ✓ Design and deployment of Barracuda load balancers across both sites
Backup Architect and Implementation Consultant	<ul style="list-style-type: none"> ✓ Design and deployment of additional backup servers within the CommVault environment to meet new backup requirements. ✓ Deployment of additional media servers.

The Results

The resources were managed by iSYSTEMS to ensure all design workshops, high level and detailed documentation were produced and key milestones were met. The Solution Architect and Project Manager attended weekly BAU meetings to ensure proactive planning and management. When unexpected challenges occurred within the project, iSYSTEMS simply pulled in further resources to maintain the regular IT administration and keep the project on track.

“What iSYSTEMS has given us is availability of staff with the required technical know-how. The project has been more complex and challenging than anticipated, iSYSTEMS has helped us keep to our project timelines,” Geoff Cross, CIO.

“The simple fact is, that without iSYSTEMS, we would never have had the staff required to deliver this project.” Simon Dent - Operations Manager

iSYSTEMS was able to assist Ramsay as it has a wealth of experience in delivering complex infrastructure solutions and is able to guide customers through best practice and compliance issues.

By independently evaluating the infrastructure needs of customers, iSYSTEMS can identify the areas or projects that will deliver maximum benefit. From in-depth assessment, design, and deployment services to complete asset procurement, integration and managed services. Using a consultative and vendor agnostic approach iSYSTEMS aligns technology, insight, and resources across a range of commercial and enterprise business applications, helping clients evolve to a service-enabled data centre model, providing on-demand elastic services and agility, enabling IT to focus on innovation.

5.3 Contact Details

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5.4 Clients

